UNIVERSITI PUTRA MALAYSIA

COMPETITIVENESS OF THE MALAYSIAN AND INDONESIAN PALM OIL EXPORTS

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COMPETITIVENESS OF THE MALAYSIAN AND INDONESIAN PALM OIL EXPORTS

By

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COMPETITIVENESS OF THE MALAYSIAN AND INDONESIAN PALM OIL EXPORTS

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February 2001

Chairperson: Professor Fatimah Mohd. Arshad, Ph.D.

Faculty: Economics and Management

Indonesia's emergence in the palm oil trade could pose a strong threat to the current competitive advantage that Malaysia is enjoying as Indonesia has large land resources and an abundant supply of cheap labour. This study intends to evaluate the Malaysian and Indonesian palm oil exports performances in the last two decades and to identify the factors contributing to the competitiveness of the exports. The competitiveness of the Malaysian and Indonesian palm oil exports are measured using economic indicators like Revealed Comparative Advantage (RCA) and Constant Market Share (CMS) analysis; while the potential export markets are ascertained through Shift-Share technique.

This study utilises annual data from 1987 to 1998. The twelve year period is decomposed into three sub periods with each period contains the four year average. Period I covers 1987-90, Period II covers 1991-94 and Period III covers 1995-98 for

RCA and CMS analyses. The Shift-Share calculations involve only two time periods, that are Period I (1987-92) and Period II (1993-98).

The results of RCA clearly show that the Malaysian palm oil export still maintains strong comparative advantage. This is mainly due to the low level import of palm oil. However, Malaysia shows a declining trend in Export Performance Ratio throughout the periods of the study due to the declining share in world's palm oil export. In the case of Indonesia, the RCA calculations show an increasing strength of comparative advantage, which is attributed to the increasing palm oil export. CMS results suggest that export gains of palm oil for both countries are mainly attributed to the size of the market effect. Both countries show negative distribution effect, due to the concentration of exports to low growth importing countries. The CMS analysis also demonstrates that the competitiveness effect has contributed to the palm oil export growth of Indonesia. On the contrary, Malaysian competitiveness effect is negative between Periods I and II, Periods I and III, which is attributed to the reduction in the Malaysia's share in the world export market. The Shift-Share analysis suggests that the potential markets for palm oil export expansion for the two countries are almost similar, covering China, Pakistan and India. However, Malaysia has a better opportunity to increase her export to the EU countries.

From the calculations, the study concludes that Indonesia shows a better competitiveness in the palm oil exports.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains.

DAYA SAING MALAYSIA DAN INDONESIA DALAM EKSPORT MINYAK KELAPA SAWIT

Oleh

CHENG CHOON HUAT

Februari 2001

Pengerusi: **Profesor Fatimah Mohd. Arshad, Ph.D.**

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Kehadiran Indonesia dalam perdagangan minyat kelapa sawit boleh mengancam kedudukan Malaysia yang menikmati kelebihan daya saing. Ini adalah kerana Indonesia mempunyai sumber tanah luas dan tenaga buruh yang murah. Kajian ini cuba menilai prestasi eksport minyak kelapa sawit bagi Malaysia dan Indonesia dalam dua dekad yang lepas, dan mengenalpasti faktor yang menyumbang kepada daya saing eksport. Daya saing eksport minyak kelapa sawit bagi Malaysia dan Indonesia dinilai dengan menggunakan petunjuk ekonomi seperti Kelebihan Berbanding Ternyata (KBT) dan Syer Pasaran Malar (SPM); manakala pasaran eksport potensi dikenalpasti melalui teknik Anjakan-Syer.

Kajian ini menggunakan data tahunan dari 1987 hingga 1998. Tempoh dua belas tahun ini dibahagikan kepada tiga tempoh yang mana setiap tempoh merangkumi purata empat tahun. Tempoh I merangkumi 1987-90, Tempoh II merangkumi 1991-94 and

Tempoh III merangkumi 1995-98 bagi analisis KBT and SPM. Pengiraan Anjakan-Syer hanya melibatkan dua tempoh sahaja, iaitu Tempoh I (1987-92) dan Tempoh II (1993-98).

Keputusan bagi KBT dengan nyata menunjukkan eksport minyak kelapa sawit bagi Malaysia masih mempunyai kelebihan daya saing yang kuat. Ini disebabkan terutamanya oleh paras import minyak kelapa sawit yang rendah. Walau bagaimanapun, Malaysia menunjukkan kecenderungan menurun dalam Nisbah Prestasi Eksport sepanjang tempoh kajian disebabkan oleh penurunan dalam syer eksport minyak kelapa sawit dunia. Bagi Indonesia pula, pengiraan KBT menunjukkan kekuatan kelebihan daya saing yang meningkat, yang mana disebabkan oleh eksport minyak kelapa sawit yang meningkat. Keputusan SPM menunjukkan keuntungan eksport minyak kelapa sawit bagi kedua-dua negara disebabkan terutamanya oleh kesan saiz pasaran. Pasangan negara ini menunjukkan kesan agihan yang negatif, akibat penumpuan eksport ke negara import yang mempunyai pertumbuhan rendah. Analisis SPM juga menunjukkan yang kesan saingan telah menyumbang kepada pertumbuhan eksport minyak kelapa sawit bagi Indonesia. Sebaliknya, kesan saingan bagi Malaysia adalah negatif antara Tempoh I dan II, Tempoh I dan III disebabkan oleh penurunan syer Malaysia dalam pasaran export dunia. Analisis Anjakan-Syer menggambarkan pasaran minyak kelapa sawit yang berpotensi bagi Malaysia dan Indonesia adalah hampir serupa, merangkumi Cina, Pakistan dan India. Walau bagaimana pun, Malaysia mempunyai peluang yang lebih baik untuk meningkatkan eksportnya ke negara-negara EU.

Daripada pengiraan, kajian ini merumuskan bahawa Indonesia lebih berdaya saing dalam eksport minyak kelapa sawit.

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Last but not least, my deepest gratitude to my family who has been very supportive and understanding throughout my years at Universiti Putra Malaysia. I would like to record my appreciation for their sacrifices and love.

I certify that an Examination Committee met on 2 February 2001 to conduct the final examination of Cheng Choon Huat on his Master of Science thesis entitled "Competitiveness of the Malaysian and Indonesian Palm Oil Exports" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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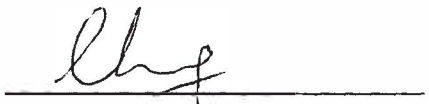
DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.



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LIST OF ABBREVIATIONS

AFTA = ASEAN Free Trade Area

ASEAN = Association of South-East Asian Nation

BIRO = Business Intelligence Report

CB = Caribbean Basin

CIF = Cost, Insurance and Freight

CIS = Commonwealth of Independent States

CMEA = Common Market Exporting Association

CMS = Constant Market Share

CPO = Crude Palm Oil

CWAD = Canadian Western Amber Durum

CWRS = Canadian Western Red Spring

EEC = European Economic Community

EU = European Union

FELCRA = Federal Land Consolidation and Rehabilitation Authority

FELDA = Federal Land Development Authority

FOB = Free on Board

HAD = Hard Amber Durum

HRS = Hard Red Spring

HRW = Hard Red Winter

IAE = Industrially Advanced Economics

IIT = Intra-Industry Trade

IMF = International Monetary Fund

LDC = Less Developed Country

MPOB = Malaysian Palm Oil Board

MPOPC = Malaysian Palm Oil Promotion Council

NAFTA = North American Free Trade Area

NES = Nucleus Estate Smallholders

NW = North-West

OECD = Organisation for Economic Cooperation and Development

PIR = Pekebunan Inti Rakyat

POCPA = Palm Oil Credit Payment Arrangement

RCA = Revealed Comparative Advantage

RISDA = Rubber Industry Smallholders Development Authority

R&D = Research and Development

SCP = Structure, Conduct and Performance

SITC = Standard International Trade Classification

TQM = Total Quality Management

UK = United Kingdom

UNIDO = United Nation International Development Organisation

US = United State of America

USSR = Union of Soviet Socialist Republics

WTO = World Trade Organisation

XRCA = Export Index of Revealed Comparative Advantage

CHAPTER 1

INTRODUCTION

1.1 Background of World Fats and Oils Market

The world production of oils and fats reached 102.38 million tonnes in 1998 with 3.8% annual growth or a rise of 15.9% compared to 1994's production of 88.36 million tonnes. Vegetable oils currently accounts for 80% of the world's production of oils and fats, and contributes about 90% of the international trade in this commodity (Oil World, 1999). Worldwide production of soybean in 1998 accounted for 23.5% of the total oils and fats production, while palm oil accounted for 16.3% followed by rapeseed oil (12.0%) and sunflowerseed oil (8.5%) as shown in Table 1.1.

Table 1.1: Oils and Fats- Production and Consumption, 1994 & 1998 ('000 tonnes)

Oils/Fats	1994		1998		1994		1998	
	Production	% share	Production	% share	Consump-tion	% share	Consump-tion	% share
Soybean Oil	18,684	21.1	24,034	23.5	18,771	21.2	23,753	23.1
Palm Oil	14,156	16.0	16,681	16.3	14,656	16.5	17,353	16.9
Rapeseed Oil	9,971	11.3	12,255	12.0	9,629	10.9	12,314	12.0
Sunflowerseed Oil	7,391	8.4	8,657	8.5	7,303	8.2	8,745	8.5
Groundnut Oil	4,309	4.9	4,517	4.4	4,311	4.9	4,507	4.4
Cottonseed Oil	3,566	4.0	3,979	3.9	3,511	4.0	4,005	3.9
Other Vegetable Oils	10,146	11.5	11,682	11.4	10,448	11.8	11,595	11.3
Total Vegetable Oils	68,223	77.2	81,805	79.9	68,629	77.4	82,272	80.0
Total Animal Oils/Fats	20,138	22.8	20,575	20.1	19,989	22.6	20,625	20.0
Grand Total	88,361	100.0	102,380	100.0	88,618	100.0	102,897	100.0

Source: Oil World, Oil World 2020

These four types of oil currently account for more than 75% of the world's vegetable oil production. As indicated in Table 1.1, the world's total oils and fats consumption in 1998 was 102.9 million tonnes. They were made up of soybean oil (23.1%), palm oil (16.9%), rapeseed oil (12.0%), sunflowerseed oil (8.5%), animal oil and fats (20.0%) and other kinds of oils (19.6%).[1]

Table 1.2: Prices of Selected Oils and Fats, 1980 – 1999 [a/] (USD/tonne)

Year	High priced oils			Medium priced oils			Low priced oils	
	Groundnut oil [b/]	Coconut oil [c/]	Palm kernel oil [d/]	Tallow [e/]	Soybean Oil [f/]	Palm oil [g/]	Linseed Oil [h/]	Fish oil [i/]
1980	859	674	669	487	598	586	351	450
1981	1043	570	588	471	507	571	354	413
1982	585	464	458	422	447	445	298	347
1983	711	730	709	423	527	502	277	380
1984	1017	1155	1037	531	724	729	298	357
1985	905	590	551	421	572	501	274	303
1986	569	297	288	294	342	257	208	219
1987	500	442	426	356	334	343	169	237
1988	590	565	539	413	463	437	294	354
1989	775	517	472	366	432	350	345	221
1990	964	337	334	348	447	290	314	250
1991	895	433	417	351	454	339	209	326
1992	610	578	571	366	429	394	211	373
1993	739	450	437	367	480	378	228	362
1994	1023	608	629	451	616	528	237	325
1995	991	670	677	521	625	628	267	457
1996	897	752	728	506	552	531	297	445
1997	1010	657	652	529	565	546	292	548
1998	909	658	687	466	626	671	295	727
1999 [a/]	788	782	729	353	469	535	241	332

Notes: a/ For 1999, Jan - May average b/ any origin, c.i.f. Rotterdam. c/ Philippines, c.i.f. Rotterdam. d/ Malay, c.i.f. Rotterdam. e/ US, bleach, fancy, c.i.f. Rotterdam. f/ Dutch, f.o.b. ex-mill. g/ crude, c.i.f. N.W. Europe. h/ Canada, No. 1, c.i.f. N.W. Europe. i/ any origin, c.i.f. N.W. Europe.

Source: Oil World, Oil World 2020

[1] Consumption refers to disappearance, calculated as the residual of the balance, i.e. visible opening stocks plus production and imports minus exports and visible ending stocks. Thereafter, the term "consumption" refers to this definition. Animal oils and fats comprise butter, lard fish oil, tallow and grease.

The prices for oils and fats and their products are determined in the market by the simultaneous interaction of fundamental forces of supply and demand, although non-market forces and barriers to trade are also of some importance. There are three distinct groups of fats and oils prices. Firstly, groundnut and lauric oil (coconut and palm kernel oil) are the high priced oils while the tallow, soybean and palm oils are the medium priced ones. Lastly, linseed and marine or fish oils are the cheapest available (Table 1.2 and Figure 1.1).

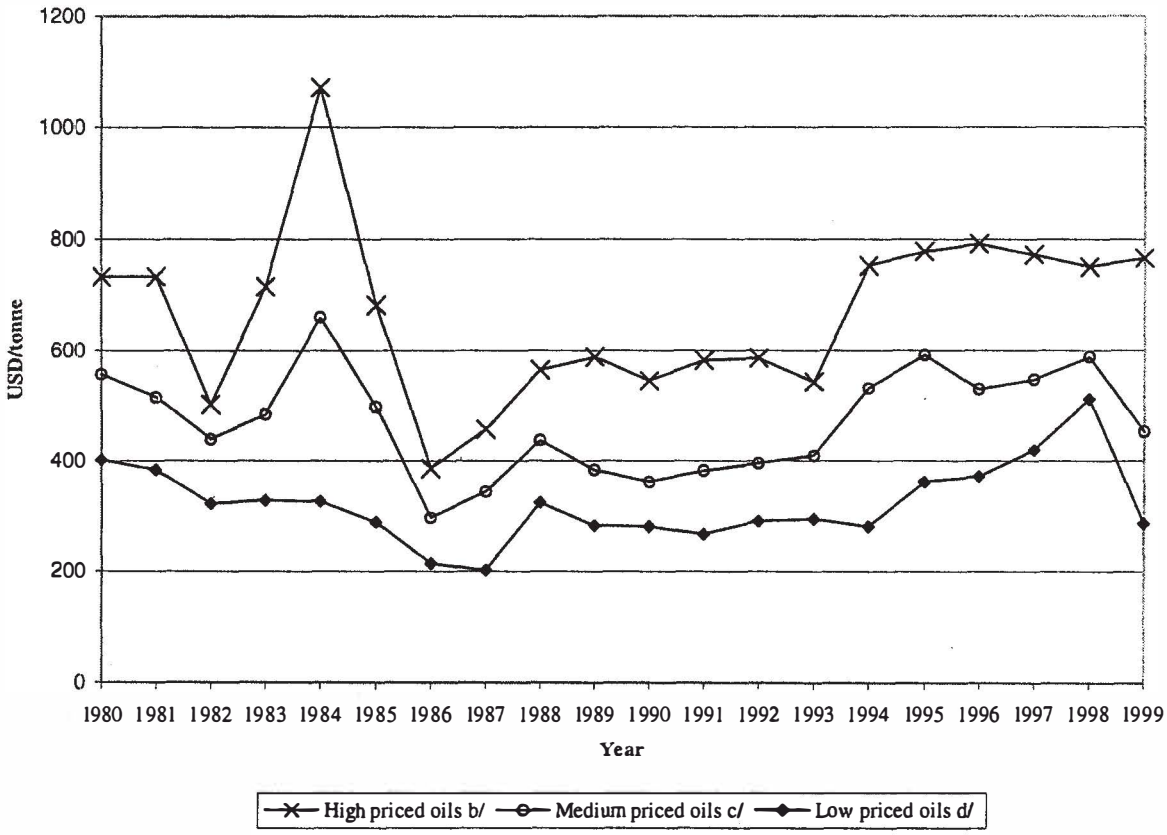

Figure 1.1: Average Prices of Three Groups of Fats and Oils, 1980 – 1999 [a/] (USD/tonne)

Notes: a/ For 1999, Jan - May average. b/ Average of groundnut, coconut and palm kernel oils. c/ Average of tallow, soybean and palm oils. d/ Average of linseed and fish oils.

Source: Oil World, Oil World 2020

1.1.1 World Production, Consumption and Trade of Palm Oil

Palm oil is one of the major sources of supply in the world market for oils and fats. Palm oil has to compete in a market containing some thirteen principal vegetable oils and oilseeds, two types of marine oils and three categories of animal fats. These oils and fats are used for both edible and non-edible purposes. Palm oil is the second most important oil in the market after soybean oil, and has maintained its contribution of around 16-18% to total world production for the period of 1994 to 1998.[2]

1.1.1.1 Production

Crude palm oil (CPO) is one of the important commodities in the world trade. According to Oil World 2020, the world production of oil and fats reached 102.38 million tonnes in 1998. Of the amount, 16.3% (16.68 million tonnes) was from the production of palm oil. The palm oil production in 1998 plummeted 6.5% compared to the 17.84 million tonnes in the year 1997. This fall was due to the drought in most part of the world, particularly in Malaysia and Indonesia, the world's biggest producers of palm oil.

The top five crude palm oil (CPO) producers (Malaysia, Indonesia, Nigeria Colombia, and Thailand) contributed 14.80 million tonnes or 88.7% of the world production in 1998 (Table 1.3). Both Malaysia and Indonesia accounted for about 80% of the world production. Hence, both countries are major market players in the world palm

[2] Palm oil refers to crude and processed palm oils (not including palm kernel oil). Thereafter, the term "palm oil" refers to this definition.

oil trade as they influenced the supply and prices of CPO in the international market. The decline in the palm oil production of both countries during 1998 had caused the world production to fall by 6.5 % compared to the previous year.

Table 1.3: World Major Producers of Palm Oil, 1980-1998 ('000 tonnes)

Country	1980	% share	1990	% share	1995	% share	1997	% share	1998	% share
Malaysia	2,573	56.1	6,095	55.3	7,811	51.3	9,069	50.8	8,320	49.9
Indonesia	691	15.1	2,413	21.9	4,220	27.7	5,380	30.2	5,006	30.0
Nigeria	433	9.4	580	5.3	660	4.3	680	3.8	690	4.1
Colombia	70	1.5	226	2.0	388	2.5	441	2.5	422	2.5
Thailand	n.a.	n.a.	226	2.0	354	2.3	390	2.2	370	2.2
Cote d'Ivoire	716	15.6	238	2.2	285	1.9	240	1.3	255	1.5
Rest of World	104	2.3	1,249	11.3	1,500	9.9	1,643	9.2	1,618	9.7
World	4,587	100.0	11,027	100.0	15,218	100.0	17,843	100.0	16,681	100.0

Sources: (i) Oil World, Oil World 2020
(ii) Oil World, Statistics Update, Various Issues
(iii) PORLA, PORLA Palm Oil Statistics, various issues (data on Malaysia).

Malaysia was the biggest palm oil producer in the world with its CPO production of 8.32 million tonnes in 1998. However, her contribution towards the world palm oil production declined from 50.8% to 49.9% between 1997 and 1998.

Indonesia was the second biggest producer accounting for 30% of the world palm oil production in 1998. Indonesia's contribution had shown a significant growth from 15.1% in 1980 to 30.2% in 1997. This data indicates an increasing importance of Indonesia in the world palm oil trade. The palm oil production growth for Indonesia was recorded at 12.0% per year in the last two decades compared to Malaysia, which was 7.8% per year during the same period (Oil World, 1999).

Production of CPO in Nigeria reached 690,000 tonnes in 1998. The country's CPO production growth however is relatively low, i.e. it grew at 3.5% per year between 1979 and 1998 (Oil World, 1999). Nigeria's share of the world production plummeted from 9.4% (1980) to 4.1% (1998). The country's CPO production was utilised for domestic consumption. Similarly, about all of the 370,000 tonnes of CPO produced by Thailand was channelled to domestic consumption. Thailand's contribution to the world production was considered small, i.e. it accounted for about 2.2%. Columbia, which produced 422,000 tonnes of CPO, exported about 17% of its domestic production while the remaining was for domestic consumption.

1.1.1.2 Consumption and Import

The world consumption of oils and fats reached 102.90 million tonnes in 1998, of which palm oil accounted for about 16.9%. During the last 20 years, the palm oil consumption growth was registered at 8.4% per year (Oil World, 1999). The consumption level in 1998 was higher than the production, reaching 17.35 million tonnes compared to 16.68 million tonnes produced in the same year. In other words, it rose 355.7% compared to the consumption level in 1979, which was only 3.81 million tonnes. Palm oil world consumption reached its peak in 1997 with a total of 17.74 million tonnes.

The high level of palm oil consumption was caused by the high demand in the United States and Latin America, which are also the biggest soybean oil producers. The

relatively cheaper palm oil price compared to the soybean was one of the major factors that encouraged the increase in demand for this product.

The main palm oil consumers are distributed in Asia, Middle East, Western Europe, and ex Soviet Union. As indicated in Table 1.4, Asian countries were the biggest palm oil consumers with five main countries, namely Indonesia, Malaysia, China, India, and Pakistan, consuming around 8.24 million tonnes in 1998 or 47.5% of the world palm oil consumption. Those five countries' consumption in 1980 was 1.44 million tonnes or 32.6% of the world palm oil consumption.

Table 1.4: World Major Consumers of Palm Oil, 1980-1998 ('000 tonnes)

Country	1980	% share	1990	% share	1995	% share	1997	% share	1998	% share
EU-15/EEC-12[a/]	690	15.6	1,377	12.4	1,689	11.4	1,923	10.8	2,037	11.7
Indonesia	240	5.4	1,237	11.2	2,159	14.6	2,841	16.0	2,763	15.9
India	565	12.8	659	6.0	758	5.1	1,388	7.8	1,782	10.3
China, P.R.	69	1.6	892	8.1	1,305	8.8	1,726	9.7	1,593	9.2
Pakistan	236	5.3	692	6.3	1,167	7.9	1,124	6.3	1,119	6.4
Malaysia	331	7.5	529	4.8	1,099	7.4	1,191	6.7	984	5.7
Nigeria	443	10.0	613	5.5	725	4.9	792	4.5	779	4.5
Rest of World	1,851	41.8	5,070	45.8	5,867	39.7	6,752	38.1	6,296	36.3
World	4,425	100.0	11,069	100.0	14,769	100.0	17,737	100.0	17,353	100.0

Note: a/ EU-15 after 1993.

Source: Oil World, Oil World 2020

European Union (EU-15) was also the main palm oil market with its commercial centre in Rotterdam, Netherlands. EU-15's consumption in 1998 was 2.04 million tonnes or 11.7% of the world consumption. Its palm oil import demand was sourced from

several countries, especially Malaysia and Indonesia. The EU-15 palm oil import volume reached 2.11 million tonnes in 1998 (Table 1.5).

Table 1.5: World Major Importers of Palm Oil, 1980-1998 ('000 tonnes)

Country	1980	% share	1990	% share	1995	% share	1997	% share	1998	% share
EU-15/EEC-12[a/]	744	16.8	1,407	12.7	1,738	11.8	2,045	11.5	2,108	12.1
India	534	12.1	668	6.0	863	5.8	1,469	8.3	1,672	9.6
China, P.R.	57	1.3	1,133	10.2	1,595	10.8	1,860	10.5	1,373	7.9
Pakistan	249	5.6	683	6.2	1,122	7.6	1,144	6.4	1,114	6.4
Japan	148	3.3	276	2.5	351	2.4	370	2.1	357	2.1
Rest of World	2,693	60.9	6,902	62.4	9,100	61.6	10,849	61.2	10,729	61.8
World	4,425	100.0	11,069	100.0	14,769	100.0	17,737	100.0	17,353	100.0

Note: a/ EU-15 after 1993.

Source: Oil World, Oil World 2020

The largest palm oil consumer was Indonesia with 2.76 million tonnes consumption in 1998 or approximately 16% of the 17.35 million tonnes world palm oil consumption. Indonesian palm oil consumption experienced an average growth of 16.3% in the last 20 years (Oil World, 1999). As the second largest palm oil producer in the world, Indonesian palm oil consumption has experienced a significant growth since the 1990s. This was caused by the shift in consumption pattern from coconut to palm oil (BIRO, 2000).

The second largest consumer was India with 1.78 million tonnes or 10.3% of total world palm oil consumption. India's consumption has grown around 18.0% per year in the last 20 years (Oil World, 1999). Most of India's palm oil import was sourced from